

## CLAIMS

What is claimed is:

1. A method for propagating an ALVAC virus, comprising: (a) infecting one or more avian embryonic stem cells with an ALVAC virus; (b) cultivating the infected avian embryonic stem cells to produce the virus; and (c) isolating the virus.
2. The method of any one of claims 1 wherein the virus comprises an exogenous DNA sequence within the ALVAC genome.
3. The method of claim 2 wherein the exogenous DNA encodes a tumor antigen, an antigen derived from a human pathogen, or a fragment thereof.
4. The method of claim 3 wherein the pathogen is bacterial, fungal or viral.
5. A method selected from the group consisting of a method of claims 1, 2, 3 and 4, wherein the exogenous DNA further encodes a co-stimulatory molecule.
6. The method of claim 5 wherein the exogenous DNA encodes the co-stimulatory molecule B7.1.
7. A method for propagating a virus, comprising: (a) infecting one or more cells derived from an avian embryonic stem cell with an ALVAC virus; (b) cultivating the infected cells to produce the virus; and, (c) isolating the virus.
8. The method of claim 7 wherein the cells are EB1 or EB14 cells.
9. The method of claim 7 or 8 wherein the virus comprises an exogenous DNA sequence within the ALVAC genome.
10. The method of claim 9 wherein the exogenous DNA encodes a tumor antigen, an antigen derived from a human pathogen, or a fragment thereof.
11. The method of claim 10 wherein the pathogen is bacterial, fungal or viral.
12. The method of claim 11 wherein the exogenous DNA further encodes a co-stimulatory molecule.
13. The method of claim 12 wherein the exogenous DNA encodes the co-stimulatory molecule B7.1.
14. A method selected from the group consisting of a method of claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 and 13, wherein the ALVAC virus is ALVAC(2).

15. A composition comprising an ALVAC virus produced by a method selected from the group consisting of the methods of claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, and 14.
- 5 16. A method for preparing a immunogenic composition comprising: (a) infecting avian embryonic stem cells with an ALVAC virus comprising within the ALVAC genome at least one exogenous nucleotide sequence encoding a human tumor antigen, an antigen derived from a human pathogen, or a fragment thereof; (b) cultivating the infected cells to produce the virus; (c) harvesting the virus from the cultivated cells; and, (d) subjecting the harvested virus to at least one of the following treatments: (i) 10 inactivating the virus, (ii) adding a pharmaceutically acceptable carrier or diluent, (iii) adding an adjuvant, or (iv) lyophilization.
17. The method of claim 17 wherein the ALVAC virus is ALVAC(2).
18. A composition comprising an ALVAC virus produced by the method of claim 17 or 18.
- 15 19. A method for preparing a immunogenic composition comprising: (a) infecting one or more cells derived from an avian embryonic stem cell with an ALVAC virus comprising within the ALVAC genome at least one exogenous nucleotide sequence encoding an antigen derived from a human tumor antigen, an antigen derived from a human pathogen, or a fragment thereof; (b) cultivating the infected cells to produce 20 the virus; (c) harvesting the virus from the cultivated cells; and, (d) subjecting the harvested virus to at least one of the following treatments: (i) inactivating the virus, (ii) adding a pharmaceutically acceptable carrier or diluent, (iii) adding an adjuvant, or (iv) lyophilization.
20. The method of claim 19 wherein the ALVAC virus is ALVAC(2).
- 25 21. The method of claim 19 or 20 wherein the cells are EB1 or EB14 cells.
22. A composition comprising an ALVAC virus produced by a method selected from the group consisting of the methods of claims 19, 20, and 21.
23. A composition useful in the manufacture of a medicament for the treatment of human disease, the composition comprising an ALVAC virus produced by a method 30 selected from the group consisting of the methods of claims 19, 20, 21, and 22.

24. A method for providing a vaccine to a host, comprising: (a) infecting avian embryonic stem cells with an ALVAC virus having within the ALVAC genome at least one exogenous nucleotide sequence encoding a human tumor antigen, an antigen derived from a human pathogen, or a fragment thereof; (b) cultivating the infected cells to produce the virus; (c) harvesting the virus from the cultivated cells; (d) subjecting the harvested virus to at least one of the following treatments: (i) inactivating the virus, (ii) adding a pharmaceutically acceptable carrier or diluent, (iii) adding an adjuvant, (iv) adding a stabilizer, or (v) lyophilizing to produce a vaccinal composition; and, (e) administering the vaccinal composition to the host whereby a protective immune response occurs in the host.
25. The method of claim 24 wherein the cells are EB1 or EB14 cells.
26. The method of claim 24 or 25 wherein the ALVAC virus is ALVAC(2).
27. A composition comprising an ALVAC virus produced by a method selected from the group consisting of the methods of claims 24, 25, and 26.
28. A composition useful in the manufacture of a medicament for the treatment of human disease, the composition comprising an ALVAC virus produced by a method selected from the group consisting of the methods of claims 24, 25, 26, and 27.